



## Measurements of trace gas species and aerosols at three Siberian stations

Mikhail Yu. Arshinov, Boris D. Belan, Denis K. Davydov, Artem V. Kozlov, Georgii A. Ivlev, Dmitrii A. Pestunov, Gennadii N. Tolmachev, and Alexander V. Fofonov

V.E. Zuev Institute of Atmospheric Optics, SB RAS, Tomsk, Russian Federation (michael@iao.ru, +73822492086)

Siberia is of great importance to understand the climate change due to it covers about 10% of Earth's land surface and it has the largest area to be studied under the Pan-Eurasian Experiment (PEEX). In the overview done by Kulmala *et al.* (2011) authors arrived at a conclusion that continuous and comprehensive measurements of GHGs and aerosols over Siberia are still lacking. Understanding the importance of this problem, in recent years the Institute of Atmospheric Optics SB RAS established several monitoring stations for continuous measurements of aerosol and trace gas species to fill up this gap.

In this paper we present some results of continuous measurements of trace gas species and aerosols carried out at three stations located in West Siberia. The first one is a so-called TOR-station located in the scientific campus of Tomsk (56°28'41"N, 85°03'15"E), the second one is the Base Experimental Complex (BEC, 56°28'49"N, 85°06'08"E) – in the eastern suburbs of Tomsk, and the third one is Fonovaya Observatory (56°25'07"N, 84°04'27"E) – in a rural area 60 km west of Tomsk. All equipment of the stations is fully automated and can be monitored via Internet. Gas analyzers are hourly calibrated against standard gas mixtures, micro-flux gas sources, or gas generators, depending on the instrument type and the gas to be detected.

Aerosol measurements carried out continuously from March 2010 enabled a frequency and seasonal dependency of the new particle formation (NPF) events to be revealed. NPF events in Siberia are more often observed during spring (from March to May) and early autumn (secondary frequency peak in September). On average, NPF events took place on 23-28 % of all days.

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Kulmala M., Alekseychik P., Paramonov M., Laurila N., Asmi E., Arneth A., Zilitinkevich S., Kerminen V.-M. 2011. On measurements of aerosol particles and greenhouse gases in Siberia and future research needs. *Boreal Environ. Res.* V.16. N4. 337–362.